STATE OF MISSOURI

ADMINISTRATION & OPERATIONS PLAN

For The

S.A.V.E. COALITION

(STRUCTURAL ASSESSMENT & VISUAL EVALUATION)

POST-DISASTER EMERGENCY VOLUNTEER PROGRAM
FOR THE
STRUCTURAL ASSESSMENT OF BUILDINGS AND VERTICAL STRUCTURES

January 2004

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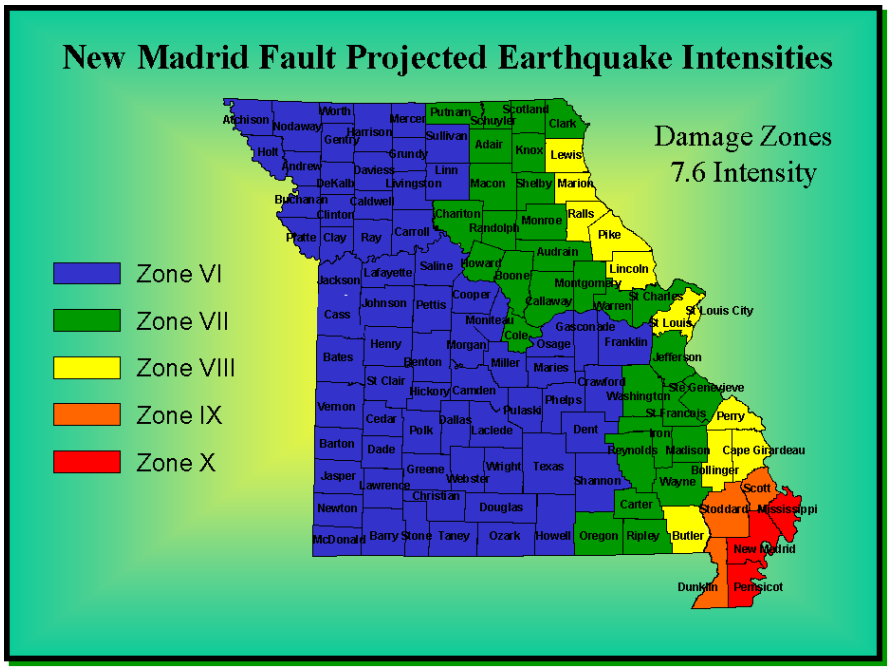
APPENDICES

Please direct questions & comments to the SEMA Earthquake Program Manager at 573-526-9212.

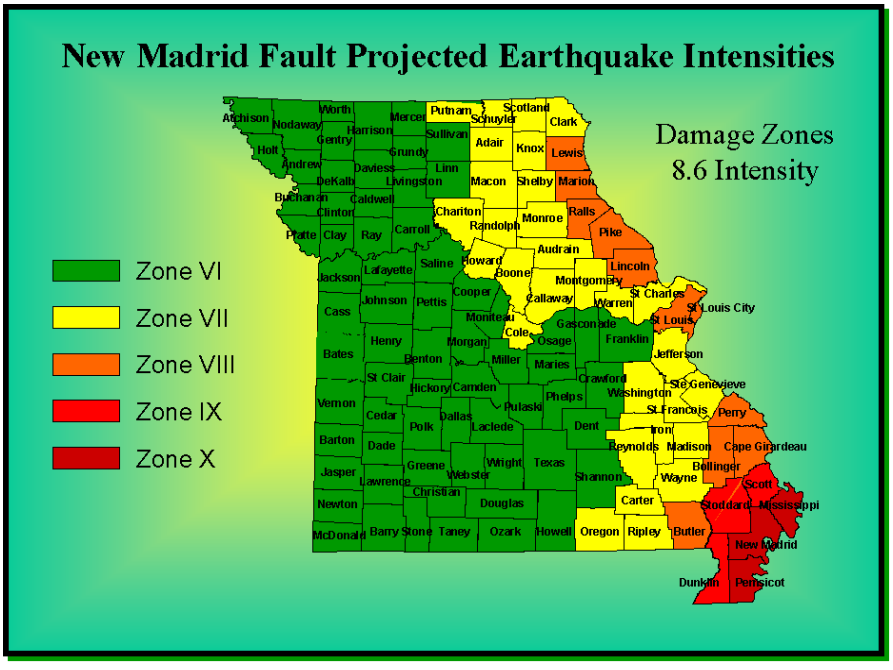
PURPOSE

This plan establishes policies and procedures for the registration, training, mobilization and use of volunteer architects, professional engineers, and other qualified volunteers as established in RSMo 44.023 in the event of an earthquake or other natural disaster.

Projected 7.6 Earthquake



Projected 8.6 Earthquake



PREFACE

Due to the continuing threat of disaster, particularly earthquakes, there is a need for a plan to assist the state and local governments in assessing the safety and serviceability of buildings within their jurisdictions. Following catastrophic events, unsafe buildings of all types pose serious hazards to their occupants. Key facilities such as emergency operating centers, those who direct and coordinate emergency response organizations, police and fire stations, hospitals and shelters for displaced and homeless victims, hotels, and other high occupancy buildings are priority locations that are critical to the recovery of the community from the catastrophic event.

Under such stressful conditions, it is essential that advance planning be in place to provide a quick and organized response so as to determine the adequacy or inadequacy of buildings for their intended uses. The following material outlines a program for the provision of qualified volunteers with experience and training in building design and construction to structurally assess buildings and vertical structures following catastrophic events.

The structural assessment and visual evaluation (SAVE) of buildings and vertical structures will be performed by a group of architects, professional engineers, and other qualified volunteers as established in RSMo 44.023, hereinafter referred to as qualified volunteers. Architects and professional engineers will assist SEMA through the SAVE Coalition which includes the following five organizations:

-American Council of Engineering Companies/Missouri (ACEC/MO) (Formerly CECMo)

-American Institute of Architects/Missouri (AIA/MO)

-American Society of Civil Engineers (ASCE) - Three Missouri Sections

-Missouri Society of Professional Engineers (MSPE)

-Structural Engineers Association of Kansas/Missouri (SEAKM)

The SAVE Coalition goals, organization and procedures are set out beginning on page 6.

The SAVE Coalition's objective is to assist the Missouri State Emergency Management Agency (SEMA) in the execution of its responsibilities with respect to the use of qualified volunteers in the emergency assessment of buildings following catastrophic events.

To provide a plan for reacting to catastrophic events, this Administrative & Operations Plan has been prepared to outline the procedures and personnel needed to properly assess the adequacy or inadequacy of buildings and vertical structures following such events.

The use of volunteers qualified under RSMo 44.023 is limited in scope to the assessment of buildings and vertical structures. In the event of a disaster, there will be an obvious need to assess other types of structures. Those having the responsibility of their construction and maintenance will do this. The Missouri Highway and Transportations Department and local Public Works Departments will inspect highways, roads and bridges. The inspection of utility lines, pipelines, sewage and water lines and systems, railroads and airports will be the responsibility of their respective owners/managers. The U.S. Army Corps of Engineers and the Missouri Department of Natural Resources will inspect dams and reservoirs.

GENERAL INFORMATION

1. This Administrative & Operations Plan is a cooperative effort involving the Missouri State Emergency Management Agency (SEMA) and various engineer and architect Professional Organizations collectively called the Structural Assessment Visual Evaluation (SAVE) Coalition. This Plan is in response to RSMo 44.023, as stated below:

"44.023. **Earthquake and natural disaster volunteer program established, agency's duties - expenses - immunity from liability, exception.**

a. The Missouri State Emergency Management Agency will establish and administer an emergency volunteer program to be activated in the event of an earthquake or other natural disaster whereby volunteer architects and professional engineers registered under chapter 327, RSMo, and construction contractors, equipment dealers and other owners and operators of construction equipment may volunteer the use of their services and equipment, either manned or unmanned, for up to three days as requested and needed by the state emergency management agency.

b. In the event of an earthquake or other natural disaster, the enrolled volunteers will, where needed, assist local jurisdictions and local building inspectors to provide essential demolition, cleanup, or other related services and to determine whether buildings affected by an earthquake or other natural disaster:

(1) Have not sustained serious damage and may be occupied;

(2) Must be vacated temporarily pending repairs; or

(3) Must be demolished in order to avoid hazards to occupants or other persons.

c. Any person when utilized as a volunteer under the emergency volunteer program will have his incidental expenses paid by the local jurisdiction for which the volunteer service is provided.

d. Architects and professional engineers, construction contractors, equipment dealers and other owners and operators of construction equipment and the companies with which they are employed, working under the emergency volunteer program will not be personally liable either jointly or separately for any act or acts committed in the performance of their official duties as emergency volunteers except in the case of willful misconduct or gross negligence.

e. Any individuals, employers, partnerships, corporations or proprietorships, that are working under the emergency volunteer program providing demolition, cleanup, removal or other related services, will not be liable for any acts committed in the performance of their official duties as emergency volunteers except in the case of "willful misconduct or gross negligence."

2. The greatest demand for volunteers will be in the first several days after a disaster. Qualified volunteers agree to be available for three consecutive days of service. However, a large earthquake, followed by aftershocks, may require the continuing use of qualified volunteers over an extended period of some weeks. In accordance with RSM 44.023, which protects volunteers against liability for up to three days, volunteers will take a one or two day break before providing additional days of inspection (not to exceed three day periods).

3. SAVE Coalition organizations offer their services to the State Emergency Management Agency with the understanding that all requests for volunteer assessments will be made through SEMA. Therefore, persons participating in the SEMA program will not make individual arrangements for volunteer service with local government unless coordinated with SEMA. This policy is not intended in any way to limit or restrict normal business relationships or contracts between professionals and local governments or private clients.

4. SEMA has agreed that volunteers' names will not appear on released copies of assessment forms; neither will their names be identified or released in relation to specific assessment reports without prior approval of the volunteer unless requested by the State Attorney General's Office or by court order.

REMEMBER SAFETY FIRST & FOREMOST

GOALS, ORGANIZATION AND PROCEDURES

1. GOALS

The goals of the Structural Assessment Visual Evaluation (SAVE) Coalition are to assist the Missouri State Emergency Management Agency (SEMA) in the following:

a. Implementing an emergency assessment of building conditions following catastrophic events.

b. Preparing a Safety Assessment Administrative Plan for Volunteers to use in performing building and structure evaluations following catastrophic events.

c. Developing training and accreditation programs for volunteers.

d. Maintaining a roster of volunteers by regions of the state.

e. Developing an "alert system" to contact volunteers and marshal these personnel to appropriate locations.

2. ORGANIZATION

a. The SAVE Coalition is a group of professional organizations whose objective is to assist SEMA in the execution of its responsibilities with respect to the use volunteers in the emergency assessment of buildings following catastrophic events.

b. The mechanism to assist SEMA in organizing and implementing the SAVE program will be a Coalition of five professional organizations. These are:

- American Institute of Architects (AIA/MO)
- American Society of Civil Engineers (ASCE)
- American Council of Engineering Companies/Missouri (ACEC/MO) (Formerly CECMo)
- Missouri Society of Professional Engineers (MSPE)
- Structural Engineers Association of Kansas/Missouri (SEAKM)

c. SEMA will be the central point of coordination for the four organizations and will handle required communications.

d. Each professional organization will designate at least two persons to represent it on the Coalition. They will serve for three years, with the exception of the first appointments when one representative will serve for two years and the other for one year. This will provide for alternating years of subsequent appointments.

e. The SAVE Coalition will designate a Statewide and four (4) Regional Contact Coordinators who will serve as the point of contact between SEMA and the qualified volunteers.

3. PROCEDURES

a. Each professional organization will have one (1) vote on matters of the Coalition.

b. The Coalition will assist in the preparation of formative, instructional, legislative and operational materials, which will be reviewed by the respective professional organizations for approval and recommendation to SEMA.

c. The Coalition will elect a Chair, Chair-elect and Secretary to serve for two (2) years. The offices will be filled on a rotational basis by the four professional organizations.

d. Regular meetings will be held at approximately six-month intervals with intermediate meetings convened at the direction of the Chairman.

e. The Secretary will keep minutes of all meetings. Record copies will be placed on file at the SEMA offices in Jefferson City.

f. The SAVE Coalition will have no fiduciary responsibilities. All costs incurred by the representatives will be the responsibility of the participating professional organizations.

4. ADOPTION

This Administrative & Operations Plan was first adopted by the SAVE Coalition at its meeting held on February 28, 1992, amended on December 4, 1992, amended April 27, 2000, and revised on January 16, 2004.

QUALIFICATIONS OF VOLUNTARY INSPECTORS

1. QUALIFICATIONS. SEMA voluntary inspectors will be architects or professional engineers registered under Chapter 327, RSMo and other individuals qualified by training and experience who have completed the required training (ATC-20 Post Earthquake Safety Evaluation of Buildings), and have been certified by SEMA. Qualified volunteers will be designated as **Structural Inspector I or II**, **Special Inspector I or II** and/or **Team Leader** as follows:

Structural Inspector I must have the following minimum qualifications:

a. Licensed Architect or Licensed Professional Engineer (Structural)
b. 5 years experience in Design and/or Construction
c. ATC-20 Graduate
d. Application indicating training and experience

Structural Inspector II must have the following minimum qualifications:

a. Carpenter or Iron worker with 5 years experience in design and/or construction or a non-licensed Architect or Engineer
b. Certified Building Inspector / Code Official
c. ATC-20 Graduate
d. Application indicating training and experience

Special Inspector I must have the following minimum qualifications:

a. Licensed Professional Engineer (Non-Structural)
b. ATC-20 Graduate
c. Application indicating training and experience

Special Inspector II must have the following minimum qualifications:

a. Non-carpenter or Non-iron worker trade experience in construction
b. Certified Building Inspector / Code Official
c. ATC-20 Graduate
d. Application indicating training and experience

Inspection Team Leader must have the following minimum qualifications:

a. Supervisor or Project Management experience
b. ATC-20 Graduate
c. Application indicating training and experience

On-Site Team Coordinator must have the following minimum qualifications:

d. Supervisor or Project Management experience
e. ATC-20 Graduate
f. Application indicating training and experience

2. CERTIFICATION. Upon completion of the training and certification by SEMA, the qualified volunteer will have a three-year certification. At the end of three years, recertifications will be issued after completing a SEMA approved refresher training.

VOLUNTARY INSPECTORS APPLICATION PROCEDURES

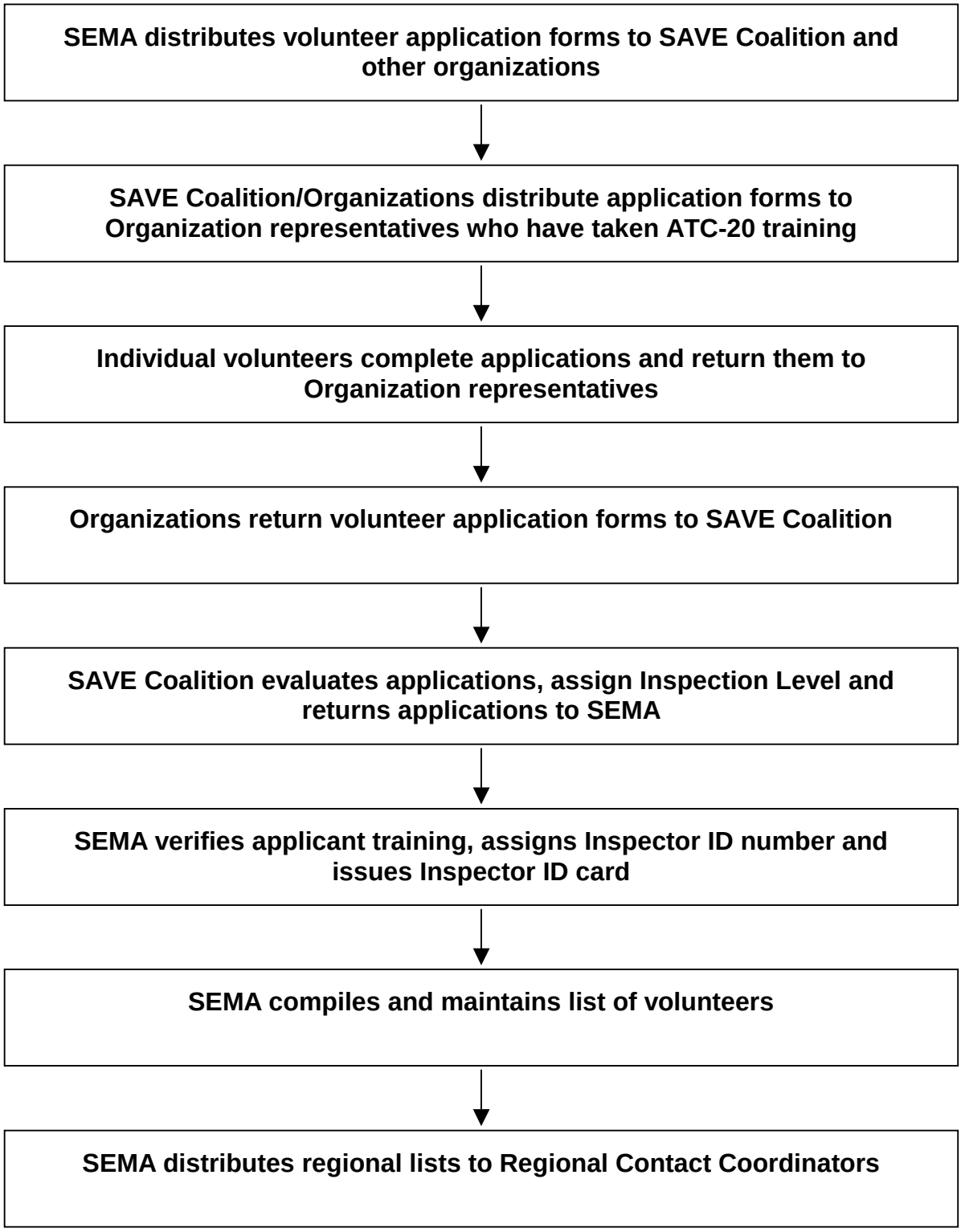
1. CONTACTS. Members of SAVE Coalition organizations wishing to serve as SEMA voluntary inspectors should contact their organization's (state/region/chapter) coordinators who will advise them of procedures to be followed. While they may apply in person or by mail, it is recommended that application take place in person, at a regularly scheduled meeting of the organization. This will provide an opportunity for workshops and presentations to explain the program for qualified volunteers make identification photos, and complete the various forms required of new voluntary inspectors.

2. APPLICATION. Completion of the volunteer application is required only once and the form will be on file at the SEMA Office. The form will be used for initial registration and will also be used to record changes of address, ID card renewals, and any changes in an individual's physical capabilities. It is the responsibility of the individual volunteer to keep SEMA informed of any changes.

3. TRAINING. Upon completion of the training and certification by SEMA, the qualified volunteer will have a three-year certification. At the end of three years, recertifications will be issued after completion of a refresher course presented by SEMA.

4. APPLICATION PROCESS. The SAVE volunteer application process is detailed in Figure A on the next page.

FIGURE A - SAVE Volunteer Application Process



PRE-EMERGENCY PROCEDURES

1. SAVE COALITION

a. Each SAVE Coalition organization participating in the SEMA Volunteer Program will appoint two or more persons to serve as its link between the professional organization and SEMA.

b. The SAVE Coalition will receive, screen, and process applications and submit those qualified to SEMA for certification as qualified volunteers.

c. Volunteer Contact Coordinators and Alternates for the state and from designated geographical areas (regions) will be requested to assist SEMA with volunteer assignments and help determine the need for additional volunteers.

2. LOCAL JURISDICTIONS

a. Each County will appoint a person to serve as its Local Disaster Coordinator who will be the coordination link with SEMA and other local jurisdictions. Local jurisdictions are also encouraged to name Local Disaster Coordinators.

b. Local Disaster Coordinators will develop and maintain written procedures for rapid alerting and activation of their volunteers. They will also provide copies of these procedures to SEMA.

c. Local jurisdictions will identify structures by priority for emergency operations and provide this information to SEMA.

d. Local jurisdictions will issue passes, placards for posting, and other documents as needed by the volunteers.

e. Local jurisdictions will designate assembly or meeting places for volunteers.

f. Local jurisdictions will be prepared to provide equipment, vehicles, communications, and other support.

g. Local jurisdictions will provide and/or reimburse qualified volunteers for housing, food, travel, film and other item required to perform their assignments.

h. Local jurisdictions will maintain a database of street maps to identify specific addresses.

3. SEMA

a. Certify and register qualified volunteers and issue them identification cards.

b. Keep an up-to-date list of names, addresses, and telephone numbers of current Professional Organizations, State, Regional, County, Charter City, and Local Disaster Coordinators and their alternates.

c. Schedule and conduct orientation and training sessions to qualify volunteers.

d. Encourage local jurisdictions to identify those facilities to be used for emergency operations centers, hospitals and care facilities, and shelters for displaced persons.

e. Coordinate with the local jurisdictions to identify locations to mobilize volunteers.

EMERGENCY PROCEDURES

The following paragraphs and Figures B through G describe the procedures to be used by local jurisdictions, SEMA, and SAVE Coalition Volunteers during the emergency period.

1. LOCAL JURISDICTION. - Local jurisdictions will:

a. Immediately assess the extent and severity of the damage, and determine the need for qualified volunteers.

b. Submit a request for volunteers through official channels to SEMA. Using the form provided by SEMA, provide as much of the requested information as is available.

c.. Designate and provide direction to a meeting place.

2. SEMA - DETERMINATION OF SITUATIONS. - Initial contact and assignment of volunteers is usually based on one of the following situations:

SITUATION 1 - The number of affected structures is small and the Local Jurisdiction can provide all the volunteers needed.

ACTION - SEMA will advise the SAVE Coalition Statewide Contact the Coordinator of the situation and ask for qualified volunteers to be placed on alert.

SITUATION 2 - The number of structures or lifeline facilities is moderately large and volunteers from more than one area of the State may be needed.

ACTION - In addition to the actions taken in Situation 1, the Statewide Contact Coordinator will alert the Regional Contact Coordinators in other regions from which additional volunteers may be required.

SITUATION 3 - The number of affected structures or lifeline facilities is very large; all available qualified volunteers will be required. It is anticipated that qualified volunteers living within the damaged areas may be fully occupied with their own assignments.

ACTION - In addition to the actions taken in Situations 1 and 2 above, the SAVE Statewide Coordinator will alert all Volunteer Contact Coordinators.

3. SEMA - ACTIONS FOR MOBILIZATION. - Based upon the situation, SEMA will contact local jurisdictions which have requested qualified volunteers and:

a. Request an estimate of the number and kinds of structures and lifeline facilities that will require inspection and priorities for the response.

b. Make sure that the requesting jurisdictions know they are responsible to provide and/or reimburse qualified volunteers for housing, food, travel, film, and other items required to perform their assignments.

c. Remind local jurisdictions that they must arrange for any special passes, maps, placards, vehicles, and guides that are required.

d. Arrange for a meeting place to be used by volunteers.

e. Request the latest information on the best routes into the disaster area. If surface routes are not open, SEMA will arrange alternate transportation.

4. SEMA - MOBILIZATION OF VOLUNTEERS. - SEMA will:

a. Inform the Statewide Contact Coordinator about the situation and request an appropriate number of qualified volunteers be alerted for assignment.

b. Identify mobilization location and/or meeting place, available surface transportation routes in the affected area, or alternate methods of transportation.

c. Provide names, locations, and telephone numbers of officials to be contacted upon arrival at the local jurisdiction.

5. QUALIFIED VOLUNTEERS

a. The Statewide Contact Coordinator, upon request from SEMA or in the anticipation of a request, or upon occurrence of an earthquake or other natural disaster, will request the Regional Coordinators to poll certified volunteers to determine their availability for assignment. The Regional Contact Coordinator will designate one individual as the On-Site Team Coordinator to serve as the interface between the teams of qualified volunteers and the Local Disaster Coordinator.

b. Individual volunteers should, upon becoming aware of a disaster situation, which could require their services, contact their Regional Contact Coordinator to advise of their availability.

c. The Regional Contact Coordinators will advise the Statewide Contact Coordinator of the number of responding volunteers.

d. The Statewide Contact Coordinator or Alternate will:

1) Inform SEMA of the number of qualified volunteers available and any special equipment needed.

(2) Keep a record of contacts made and qualified volunteers dispatched.

(3) Ensure that all qualified volunteers are informed of where and when to report, to whom to report, and their mode of transportation. For most disasters, car-pooling, using private vehicles, may be the most effective method of getting to the location.

6. SAVE PROCEDURES

a. **GENERAL.** The procedures contained in this section represent those for the organization, call-out, response and safety assessment for SAVE.

b. **ORGANIZATION.** The SAVE Coalition is a statewide organization of professional architects and engineers with experience and background in the design and analysis of building structures. SAVE is composed of 4 regions located as noted on the map included at the end of this chapter. SAVE and each of its regions are organized for emergency response as noted in the following sections.

(1) SAVE will appoint a Statewide Coordinator who will be the contact between SEMA and SAVE. They will also appoint at least one, but preferably two, alternate coordinators.

(2) Each region of SAVE will appoint a Volunteer Contact Coordinator and at least one, but preferably two, alternates.

(3) Though the boundaries of the regions may cross county lines, this does not present a jurisdictional problem since the SAVE volunteers are considered a State of Missouri resource.

c. **CALL-OUT PROCEDURES.** The following are the procedures which will be followed by the local jurisdictions and SEMA in the activation of the SAVE volunteers (Figure B).

(1) If the assistance of volunteers from SEMA is required, the following procedures will be followed:

(a) A state of emergency must be declared by the Governor.

(b) The emergency manager from an affected jurisdiction will contact that county's emergency manager and request the assistance of assessment volunteers. The request will include the number and type of buildings damaged and the meeting place. Since the volunteers are committed to a maximum of three days at a time, the SAVE Statewide Coordinator will estimate the amount of time they will be needed and will arrange additional responses as necessary.

(c) The county emergency manager will log and document the requests from each requesting jurisdiction within the county and contact SEMA to request the assistance of volunteers.

(d) SEMA will contact the SAVE Statewide Coordinator who will, in turn, contact the appropriate Regional Contact Coordinator(s) who will initiate and coordinate a call-out to respond to the affected jurisdiction(s).

d. **RESPONSE PROCEDURES.** For an event that requires the assistance of volunteers, the following procedures will be used:

(1) The responding volunteers will report to the jurisdictions as directed.

(2) One Qualified Volunteer will be designated by the Regional Contact Coordinator(s) as an On-Site Team Coordinator for each jurisdiction. The On-Site Team Coordinator will assign the responding volunteers.

e. **SAFETY ASSESSMENT RESPONSIBILITIES AND PROCEDURES.** SAVE'S primary assignment will be to perform rapid visual evaluations of all buildings and structures as designated by the local building official.

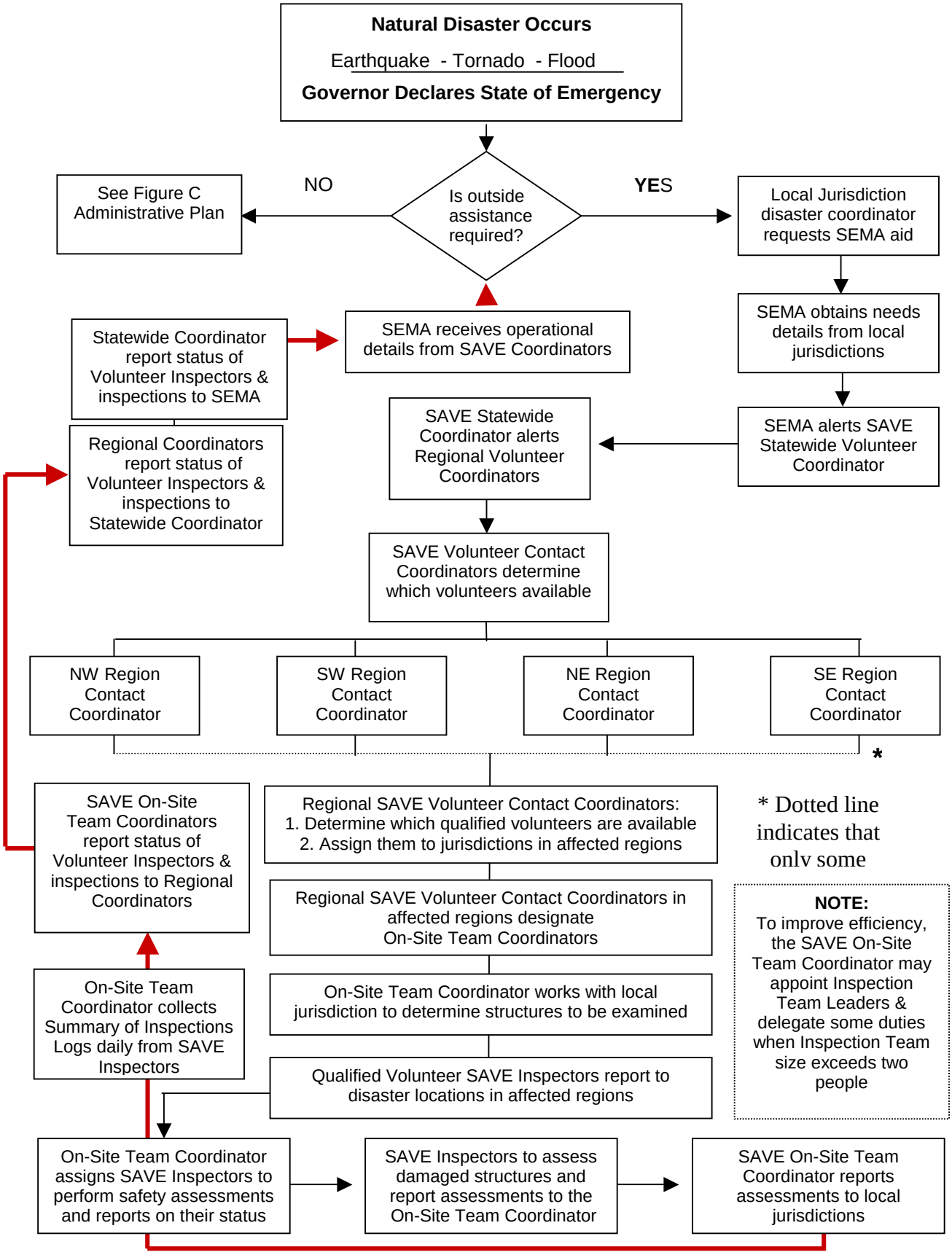
(1) Visual Evaluations will be performed using the Rapid Evaluation Forms, in accordance with the procedures included therein, the instructions included in Figures E, F and G and as further described in ATC-20 "Procedures for Post-earthquake Safety Evaluation of Buildings".

(2) SAVE's secondary assignment, with relation to the evaluations, will be to provide as much factual information as possible relating to the condition of access to the structure for possession retrieval.

(3) Based on visual evaluations, buildings will be posted with placards indicating the damage category. Requirements as to posting procedures will be determined by the affected jurisdiction.

(4) In some jurisdictions, when coordinated with and accepted by SEMA, Rapid Evaluation Forms may vary somewhat in format from the ATC-20 form. These jurisdictional forms have been codified by local government ordinances that meet or exceed approved building codes and may be used by SAVE inspectors.

Figure B - SAVE Volunteer Mobilization Notification & Coordination



MISSOURI SAVE REGIONS

Figure C

POST-DISASTER INSPECTION OPERATIONS

1. LOCAL JURISDICTIONS. Immediately after the event, affected jurisdictions will perform an initial assessment of damage within their jurisdiction and identify all pre-defined essential services facilities. This assessment can be a "windshield survey" or performed by any other method available to the jurisdiction. The purpose of this initial assessment will be to determine the number and priorities of buildings damaged. The jurisdiction will then use this assessment to determine if additional resources are needed. If SAVE volunteers are needed, this assessment will assist the SAVE Statewide Coordinator to determine the number and skills of volunteers needed.

a. After the initial assessment has been completed and the needs of the jurisdiction determined, the jurisdiction's building inspectors should begin performing preliminary evaluations of buildings in the damaged areas based on previously established facility priorities.

b. The purpose of these evaluations is to classify the obviously safe or unsafe buildings and to define those that require more detailed evaluations. The jurisdiction should be prepared to utilize the resources of the "walk-on" volunteers who are architects, engineers, building inspectors or others that are deemed qualified by the jurisdiction.

2. "WALK-ON" VOLUNTEERS. These types of volunteers, with background in building construction, should be directed to the local building official.

a. If the building official wishes to utilize their services, it is recommended that:

(1) They be deputized as deputy building inspectors for the jurisdiction

(2) They be teamed with the jurisdiction's building inspectors to develop the evaluation teams to perform rapid evaluations.

(3) Liability protection for "walk-on" volunteers would be available if they are deputized as deputy building inspectors. They would be afforded the same liability protection as any other employee of that jurisdiction.

3. SAVE VOLUNTEERS. Upon arrival at their assigned jurisdictions, they will be briefed on:

a. Any special policies in effect,

b. Potential or existing hazards to be aware of,

c. Safety precautions,

d. Housing accommodations and eating arrangements

e. Reimbursement Policy: If not otherwise provided, the Local Jurisdiction is responsible to reimburse volunteers they have requested. Reimbursable costs include housing, food, travel, film, and other necessary expenses. Volunteers must submit receipts of expenses for reimbursement.

f. An explanation of the use of assessment forms and the jurisdiction's posting policies.

g. A public information list from the jurisdiction with phone numbers and locations of first aid stations, emergency shelters, police, fire, building department and other information the jurisdiction deems important.

h. A list of structures (or areas) to be evaluated.

4. ASSESSMENT ASSIGNMENTS. All assessment assignments should be made by the local jurisdiction to the On-site Team Coordinator. For safety reasons, assessment teams will consist of two or more members. Teams and assignments should be made in accordance with the Flow Diagram (Figure D). The On-site Team Coordinator will then assign tasks to the volunteer SAVE Inspectors directly, or through Inspection Team Leaders when multiple teams necessitate their appointment. Care should be exercised when scheduling volunteers to ensure that assignments are consistent with their professional qualifications and physical capability. Once rapid evaluations are completed, local building inspectors should be assigned to work with the detailed evaluation teams.

a. SAVE volunteers will be used to perform:

(1) Rapid evaluations of buildings if the jurisdiction has not completed the process by the time the SAVE volunteers arrive.

(2) Detailed evaluations of those structures which, during the rapid evaluations, were found to be in a questionable condition or deemed unsafe but needed a detailed evaluation.

5. BRIEFING JURISDICTION OFFICIALS. Upon completion of the detailed evaluations of buildings, the volunteers will review their assessment forms with their team leader. When the assessment forms are complete, the team leader will log them and make an appropriate number of copies. At this time the volunteers should brief the local officials on the condition of the building assessed. Qualified volunteers will:

a. Provide as much factual information as possible relating to the structural condition of the building

b. Provide as much factual information as possible relating to the condition of access to the building for possession retrieval.

c. Not offer opinions relating whether or not a particular building should be demolished or repaired. If the volunteers have been deputized by the jurisdiction, the jurisdiction can ask for such a recommendation. However, the detailed evaluations performed may not provide sufficient information to justify such a recommendation except for obvious conditions.

6. REPORT DISTRIBUTION. The On-site Team Coordinator will arrange to have legible copies made of assessment reports and accompanying pictures, sketches, etc. The On-site Team Coordinator will log all assessment reports on the Release Form and will note the name and title of the jurisdiction representative to whom the original reports were given. Part of these duties may be delegated to Inspection Team Leaders if they are appointed. All paperwork still must at least go through the On-Site Team Coordinator. At least one copy will be retained for SEMA.

7. ADDITIONAL ASSISTANCE. If an assessment team requires:

a. Assistance with shoring, bracing or emergency services, the request should be made through the On-site Team Coordinator to the jurisdiction.

b. More supplies or equipment, the request should be made through the On-site Team Coordinator to the jurisdiction.

8. POSTING PLACARDS. After a facility has been evaluated, a placard must be used to provide notice about its condition. Posting of SEMA placards by Qualified Volunteers represents a recommendation only and is not intended to be a substitute for actions by local officials. If a local jurisdiction wants the Qualified Volunteers to make official postings, they must deputize them as Deputy Building Inspectors. Refer any dispute of the Inspector's decision to local officials.

Inspectors must be careful to post placards where they can be seen readily. However, inspectors also must be careful that they do not endanger themselves when posting placards. For example, the instructor should not place a placard on the front door if the inspector must step on a porch that is in danger of falling.

a. DAMAGE CATEGORIES. The evaluation of structures will place them in categories of damage as stated in (Figures E, F and G of this Administrative Plan.

b. All placards will be posted with the address of the structure and the date and time of the evaluation.

REMEMBER SAFETY FIRST & FOREMOST

Figure D - Flow Diagram for SAVE Volunteers Mobilization and Inspection

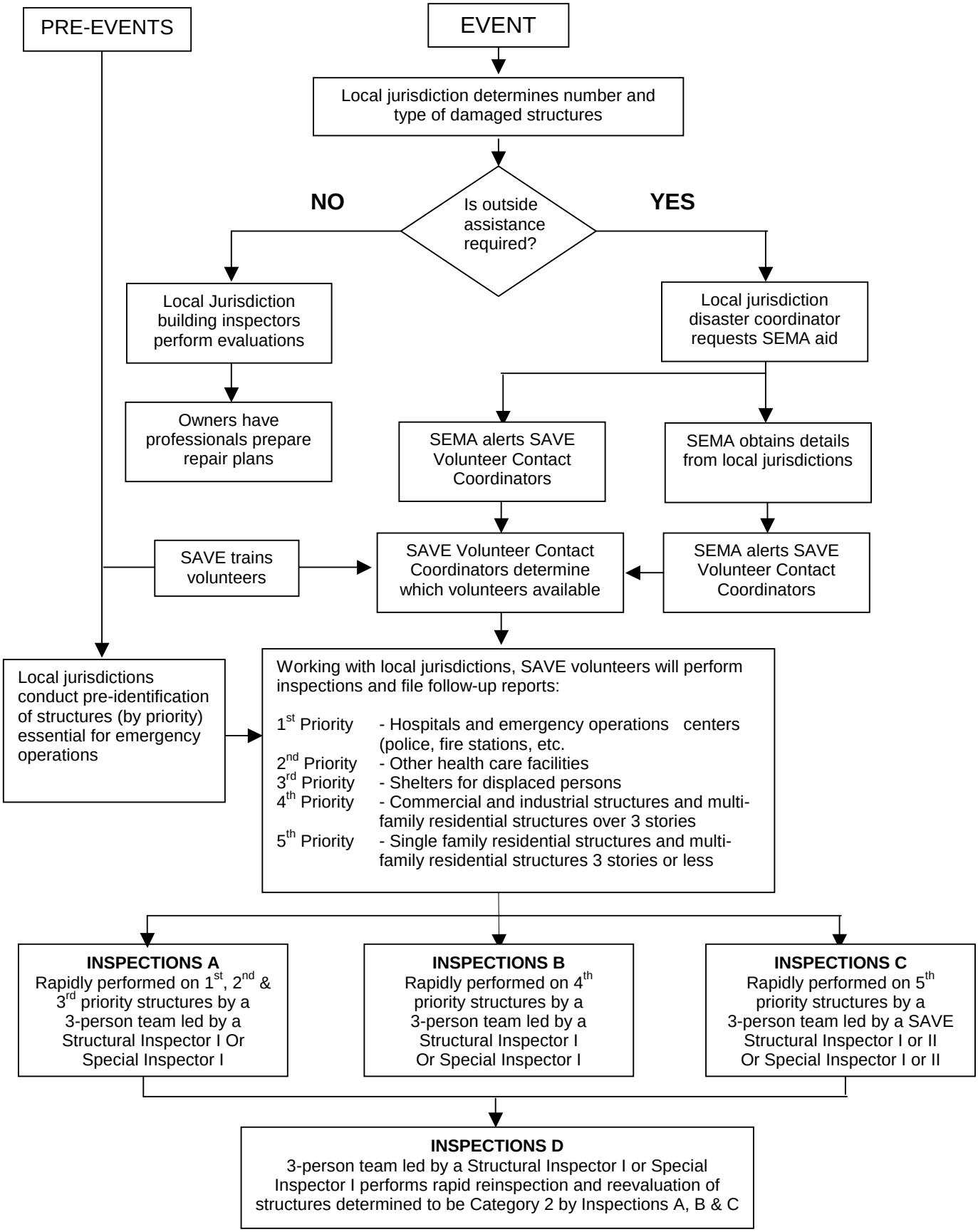


Figure E - DAMAGE CATEGORIES

The assessment of structures will be done in accordance with procedures set forth in training manual ATC-20 (or its latest revision) to place structures into one of three categories of damage as follows:

Category 1 - INSPECTED - Has not sustained serious damage and may be occupied, that is, the damage is slight and the structure may be reoccupied.

(GREEN PLACARD)

Figure F - DAMAGE CATEGORIES

Category 2 - RESTRICTED USE – There is apparent damage but the extent of damage cannot be readily evaluated; limited entry may be granted only by special permission otherwise do not occupy prior to reinspection and evaluation.

(YELLOW PLACARD)

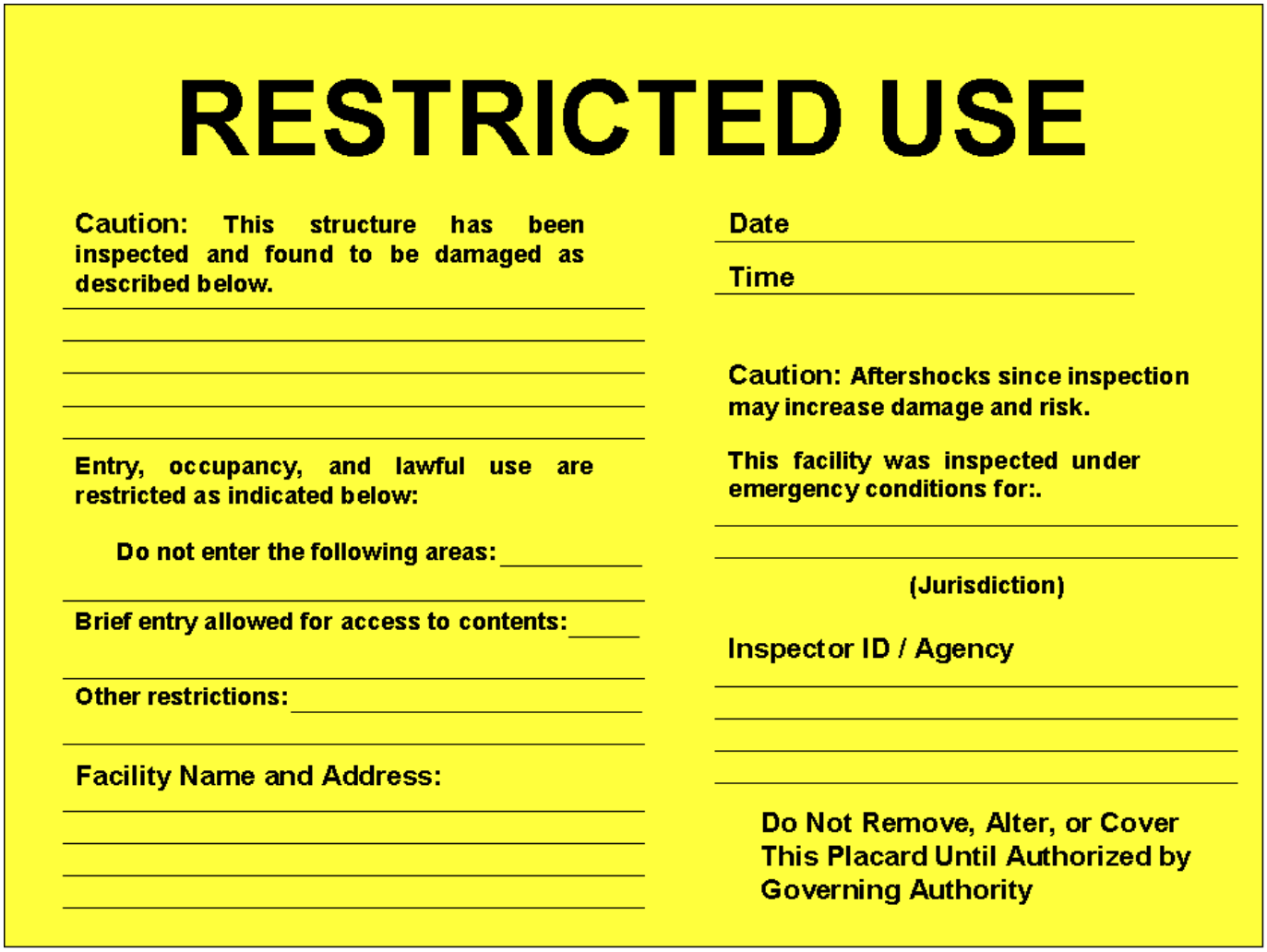
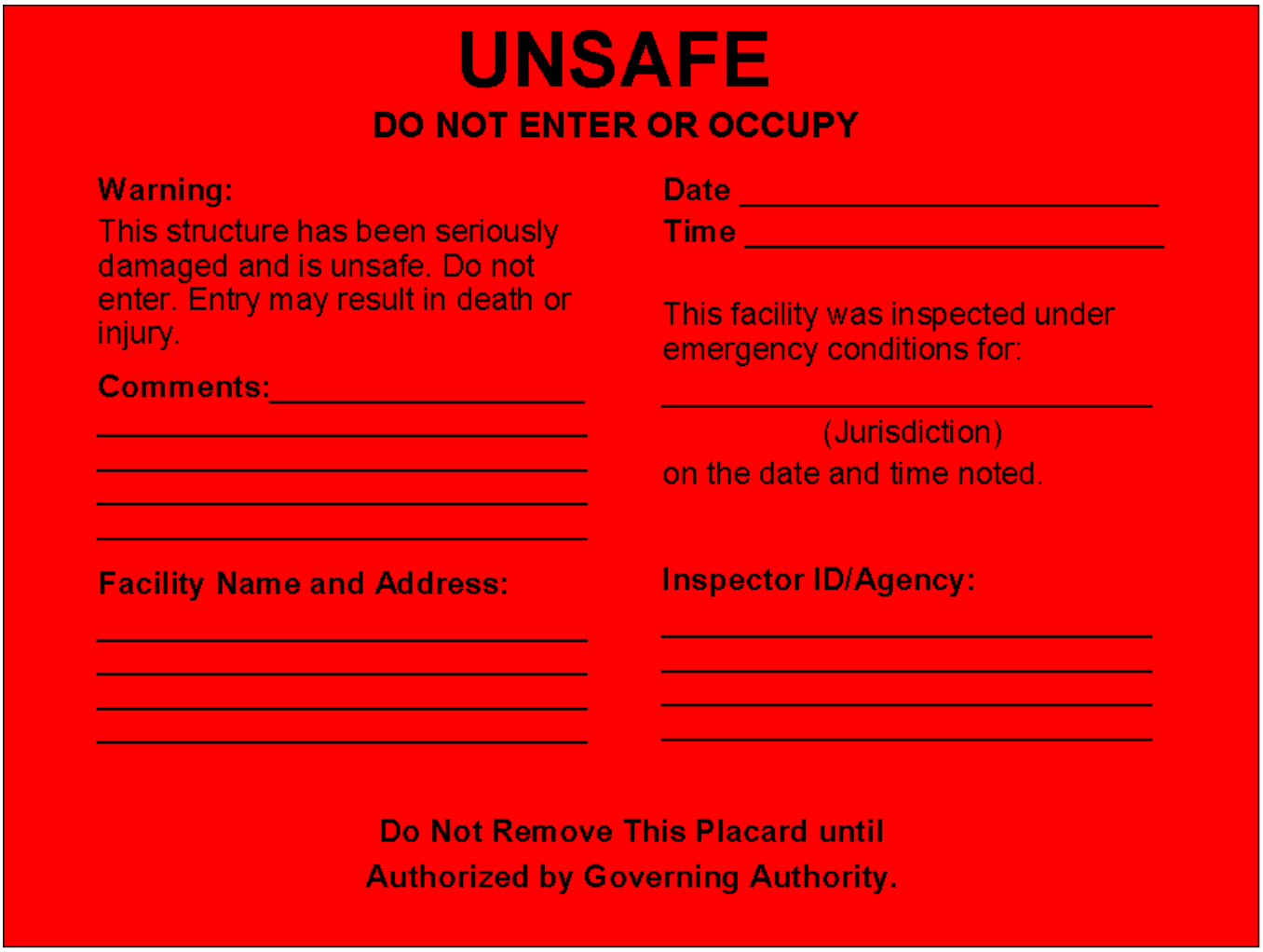


Figure G - DAMAGE CATEGORIES

Category 3 - UNSAFE - The extent of damage appears severe and the building cannot be occupied.

(RED PLACARD)



9. PRIORITIES OF ASSESSMENTS. Structures will be assessed in five priorities, as follows:

1st Priority - Hospitals and emergency operations centers such as police stations, fire stations, etc.

2nd Priority - Other health care facilities

3rd Priority - Shelters for displaced persons

4th Priority - Commercial and industrial structures and multi-family residential structures over three stories in height

5th Priority - Single-family residential structures and multi-family residential structures three stories or less in height. Schools, churches, and other public facilities based on the priority set by the local jurisdiction.

10. ASSESSMENT OF STRUCTURES. The rapid visual assessment of structures will be performed in accordance with the ATC-20 Field Manual evaluation procedures:

a. Inspection A. These inspections involve evaluation of the structures in Priorities 1, 2, and 3 which are critical to the post-earthquake response operations. Teams of at least three qualified personnel, one of whom must be a Structural Inspector I or Special Inspector I, will perform these evaluations.

b. Inspection B. These inspections involve the initial rapid evaluation of 4th Priority structures. Teams of at least three qualified personnel, one of whom must be a Structural Inspector I or Special Inspector I, will perform these evaluations.

c. Inspection C. These inspections involve the initial rapid evaluation of 4th Priority structures. Teams of at least three qualified personnel, one of whom must be a Structural Inspector I or Special Inspector I, will perform these evaluations.

d. Inspection D. These inspections involve the reinspection and evaluation of those structures placed in Category 2 as a result of Inspections A, B and C above. Teams of at least three qualified personnel, one of whom must be a Structural Inspector I or Special Inspector I, will perform these evaluations.

A Summary of Inspections log, by address of each building evaluated will be maintained by each SAVE Inspector and submitted daily in accordance with Figure B to the On-Site Team Coordinator or Inspection Team Leader. The On-Site Team Coordinator or Inspection Team Leader will provide 1 copy to local jurisdiction officials and 1copy to the Regional Coordinator. The Regional Coordinator will retain 1 copy and send another copy to the SEMA Earthquake Program Manager at the SEOC for tracking progress and to help determine how to proceed with state and federal assistance.

11. ASSESSMENT FORMS

a. **GENERAL ASSESSMENT REPORT INSTRUCTIONS FOR VOLUNTEERS.** Standard forms for assessing the safety and operational capability of buildings have been developed. These forms, when completed, together with any pictures, sketches or drawings, will be used to provide an accurate report of the volunteer's assessments. The attached forms are to be used, unless other forms have been coordinated with and accepted by SEMA.

(1) SAVE volunteers should not make recommendations relating to the repair or demolition of any structure. However, if a volunteer has been deputized as a Deputy Building Inspector, such a recommendation could be provided if requested by the jurisdiction. Specific recommendations relating to demolition or feasibility of repair are the responsibility of the local jurisdiction and will not be reported on the assessment forms.

(2) Requests from building owners for copies of the completed assessment forms should be referred to the local jurisdiction. Completed forms will be given to the Inspection Team Leader or On-Site Team Coordinator only.

(3) The On-site Team Coordinator or Inspection Team Leader will assign report numbers to all assessment reports in the upper right hand corner of each page. This report number should also be entered on all photos, sketches, etc. for that facility. All documents must be traceable to their proper assignments.

(a). The assessment report number will be assigned as follows:

(1) The first number will be the team number assigned by the jurisdiction.

(2) The second number will be sequential.

12. SAFETY ASSESSMENT FORMS. The follow-on pages contain the safety assessment report forms for buildings.

a. Ensure that all sections of the report have been completed. The SAVE Inspector will write his or her SAVE Inspector ID number (No Names) on each report so the Inspector can be identified by proper officials in the event that questions arise. Reports will be turned in at the end of each day. Attach all pictures and sketches to the report.

b. If a team determines that a facility is an imminent threat to life or adjacent property, the team should immediately notify the Inspection Team Leader or On-site Team Coordinator.

ATC-20 Rapid Evaluation Safety Assessment Form

Inspection

Report # _____

Inspector ID: _____ Inspection date and time: _____ ☐ AM ☐ PM

Affiliation: _____ Areas inspected: ☐ Exterior only ☐ Exterior and interior

Building Description

Building name: _____

Address: _____

_____

Building contact/phone: _____

Number of stories above ground: ____ below ground: ____

Approx. "Footprint area" (square feet): _____

Number of residential units: _____

Number of residential units not habitable: _____

Type of Construction

☐ Wood frame ☐ Concrete shear wall
☐ Steel frame ☐ Unreinforced masonry
☐ Tilt-up concrete ☐ Reinforced masonry
☐ Concrete frame ☐ Other: _____

Primary Occupancy

☐ Dwelling ☐ Commercial ☐ Government
☐ Other residential ☐ Offices ☐ Historic
☐ Public assembly ☐ Industrial ☐ School
☐ Emergency services ☐ Other: _____

Evaluation

Investigate the building for the conditions below and check the appropriate column.

Observed Conditions:	Minor/None	Moderate	Severe
Collapse, partial collapse, or building off foundation	☐	☐	☐
Building or story leaning	☐	☐	☐
Racking damage to walls, other structural damage	☐	☐	☐
Chimney, parapet, or other falling hazard	☐	☐	☐
Ground slope movement or cracking	☐	☐	☐
Other (specify) _____	☐	☐	☐

Comments: _____

_____

Posting

Choose a posting based on the evaluation and team judgment. *Severe* conditions endangering the overall building are grounds for an Unsafe posting. Localized *Severe* and overall *Moderate* conditions may allow a Restricted Use posting. Post INSPECTED placard at main entrance. Post RESTRICTED USE and UNSAFE placards at all entrances.

☐ **INSPECTED** (Green placard) ☐ **RESTRICTED USE** (Yellow placard) ☐ **UNSAFE** (Red placard)

Record any use and entry restrictions exactly as written on placard: _____

_____

_____

Further Actions

Check the boxes below only if further actions are needed.

☐ Barricades needed in the following areas: _____

_____

☐ Detailed Evaluation recommended: ☐ Structural ☐ Geotechnical ☐ Other: _____

☐ Other recommendations: _____

Comments: _____

_____

ATC-20 Detailed Evaluation Safety Assessment Form

Inspection Report # _____

Inspector ID: _____

Affiliation: _____

Inspection date and time: _____ ☐ AM ☐ PM

Final Posting
from page 2

☐ Inspected
☐ Restricted Use
☐ Unsafe

Building Description

Building name: _____

Address: _____

_____

Building contact/phone: _____

Number of stories above ground: ____ below ground: ____

Approx. "Footprint area" (square feet): _____

Number of residential units: _____

Number of residential units not habitable: _____

Type of Construction

☐ Wood frame
☐ Steel frame
☐ Tilt-up concrete
☐ Concrete frame
☐ Concrete shear wall
☐ Unreinforced masonry
☐ Reinforced masonry
☐ Other: _____

Primary Occupancy

☐ Dwelling
☐ Other residential
☐ Public assembly
☐ Emergency services
☐ Commercial
☐ Offices
☐ Industrial
☐ Other: _____
☐ Government
☐ Historic
☐ School

Evaluation

Investigate the building for the conditions below and check the appropriate column. There is room on the second page for a sketch.

	Minor/None	Moderate	Severe	Comments
Overall hazards:				
Collapse or partial collapse	☐	☐	☐	_____
Building or story leaning	☐	☐	☐	_____
Other_____	☐	☐	☐	_____
Structural hazards:				
Foundations	☐	☐	☐	_____
Roofs, floors (vertical loads)	☐	☐	☐	_____
Columns, pilasters, corbels	☐	☐	☐	_____
Diaphragms, horizontal bracing	☐	☐	☐	_____
Walls, vertical bracing	☐	☐	☐	_____
Precast connections	☐	☐	☐	_____
Other_____	☐	☐	☐	_____
Nonstructural hazards:				
Parapets, ornamentation	☐	☐	☐	_____
Cladding, glazing	☐	☐	☐	_____
Ceilings, light fixtures	☐	☐	☐	_____
Interior walls, partitions	☐	☐	☐	_____
Elevators	☐	☐	☐	_____
Stairs, exits	☐	☐	☐	_____
Electric, gas	☐	☐	☐	_____
Other_____	☐	☐	☐	_____
Geotechnical hazards:				
Slope failure, debris	☐	☐	☐	_____
Ground movement, fissures	☐	☐	☐	_____
Other_____	☐	☐	☐	_____

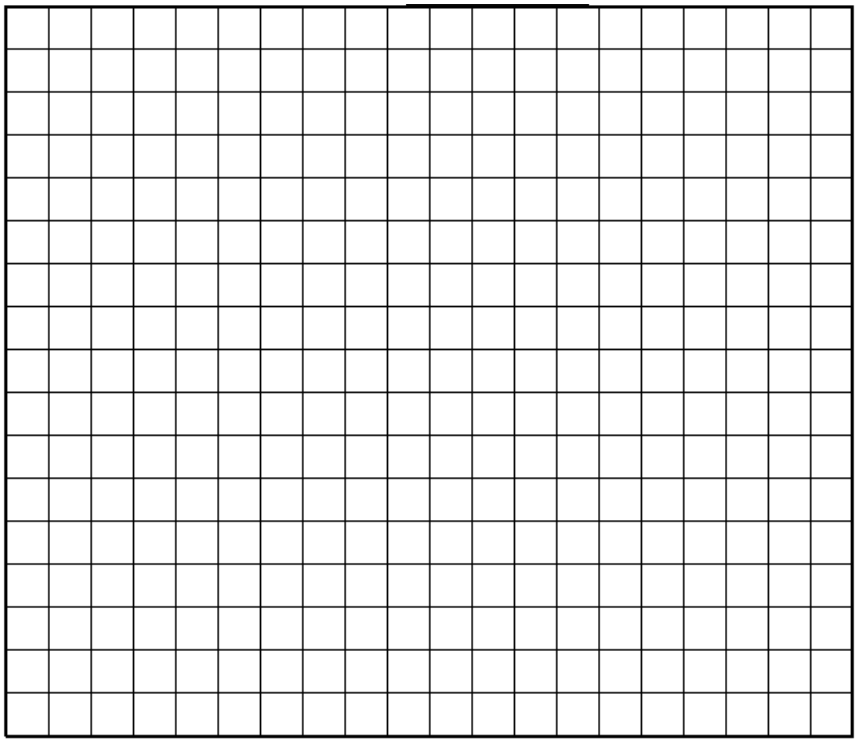
General Comments: _____

_____

Continue on page 2

Building name: _____ Inspector ID: _____
Report #

Sketch (optional)
Provide a sketch of the building or damaged portions. Indicate damage points.



Posting

If there is an existing posting from a previous evaluation, check the appropriate box.

Previous posting: ☐ INSPECTED ☐ RESTRICTED USE ☐ UNSAFE Inspector ID: _____ Date: _____

If necessary, revise the posting based on the new evaluation and team judgment. *Severe* conditions endangering the overall building are grounds for an Unsafe posting. Local *Severe* and overall *Moderate* conditions may allow a Restricted Use posting. Indicate the current posting below and at the top of page one.

☐ **INSPECTED** (Green placard) ☐ **RESTRICTED USE** (Yellow placard) ☐ **UNSAFE** (Red placard)

Record any use and entry restrictions exactly as written on placard: _____

_____

_____

Further Actions

Check the boxes below only if further actions are needed.

☐ Barricades needed in the following areas: _____

_____

☐ Engineering Evaluation recommended: ☐ Structural ☐ Geotechnical ☐ Other: _____

☐ Other recommendations: _____

_____

_____

Comments: _____

_____

ATC-20 Fixed Equipment Checklist

FACILITY:
Name: _____
_____
Address: _____
_____
_____

INSPECTOR:
Inspector ID: _____
Affiliation: _____
Report #: _____

INSPECTION DATE:
Mo/day/year _____
Time _____ **a.m.** ___ **p.m.** ___

CHECKLIST: **Equipment Damaged**

General Items:	*No*	*Yes Operable*	*Yes Inoperable*	*Comments*
Main Boilers	☐	☐	☐	_____
Chillers	☐	☐	☐	_____
Emergency Generators	☐	☐	☐	_____
Fuel Tanks	☐	☐	☐	_____
Battery Racks	☐	☐	☐	_____
Fire Pumps	☐	☐	☐	_____
On-site Water Storage	☐	☐	☐	_____
Communications Equipment	☐	☐	☐	_____
Main Transformers	☐	☐	☐	_____
Main Electrical Panels	☐	☐	☐	_____
Elevators (Traction)	☐	☐	☐	_____
Other Fixed Equipment:	☐	☐	☐	_____
_____	☐	☐	☐	_____
_____	☐	☐	☐	_____
_____	☐	☐	☐	_____
_____	☐	☐	☐	_____
_____	☐	☐	☐	_____

Special Concerns for Hospitals and Other Health Care Facilities:

Radiation Equipment	☐	☐	☐	_____
Toxic Chemical Storage	☐	☐	☐	_____
BIOHAZARD Storage	☐	☐	☐	_____
_____	☐	☐	☐	_____
_____	☐	☐	☐	_____
				_____
Liquid Oxygen Tanks	☐	☐	☐	_____
Other:	☐	☐	☐	_____
_____	☐	☐	☐	_____
_____	☐	☐	☐	_____

Recommendations/Comments: _____
_____
_____

Sheet_____of_____

Missouri SAVE Coalition
Summary of Inspections Log

Inspector Name: _____ **Inspector ID #** _____

Jurisdiction:_____ **SAVE Region:**_____

Report Number	Address	Inspection Date m/d/y	Type of Report	Receiving Official *	Occupancy Type	**Structure STATUS**

Primary Occupancy Type

SFR……..Single Family Residence
MFR…….Multiple Family Residence
Y
HI……Historic
GOV…Government
ES…….Emergency Services
COM….Commercial
IND……Industrial
OFF……Office
SCH….School
P.A. ….Public Assembly

CURRENT STATUS

UNSAFE……R
LIMITED ENTRY…….
INSPECTED……..G

Date this Summary Report Submitted to Local Jurisdiction Officials: _____

APPENDIX A

GLOSSARY OF TERMS

FEMA – Federal Emergency Management Agency

Local Disaster Coordinator - The individual designated by the local jurisdiction as its point of contact with SEMA, in the event of a natural disaster, for matters requiring coordination between SEMA and the local jurisdiction.

Local Jurisdiction - A county, city, town, or village in the State of Missouri

Natural Disaster - Disaster that results from fire, flood, earthquake, or other natural causes

Professional Organizations - The four organizations identified below under SAVE Coalition.

Qualified Volunteers - Architects and professional engineers registered under Chapter 327, RSMo, and other individuals qualified by training and experience who have received the required training and been certified by the State of Missouri as qualified for the voluntary inspectors program. Qualified volunteers will be designated as "structural inspectors", "specific inspectors", or "general inspectors".

RSMo - Revised Statutes of Missouri

SAVE - Structural assessment and visual evaluation of buildings and vertical structures

SAVE Coalition - A group of architects and professional engineers organized to assist SEMA in the structural assessment and visual evaluation of buildings subsequent to an earthquake or other natural disaster. The following professional organizations comprise the SAVE Coalition:

American Institute of Architects/Missouri (AIA/MO)

American Society of Civil Engineers (ASCE)

Consulting Engineers Council of Mo. (CECMo)

Missouri Society of Professional Engineers (MSPE)

SEMA - The Missouri State Emergency Management Agency

Special Inspector I – A qualified volunteer who is a Licensed Professional Engineer (Non-Structural) and meets the other requirements set forth for such designations.

Special Inspector II – A qualified volunteer who has Non-carpenter or Non-iron worker trade experience in construction, or a Certified Building Inspector / Code Official, and meets the other requirements set forth for such designations.

Structural Inspector I – A qualified volunteer who is a Licensed Architect or Licensed Professional Engineer (Structural) with 5 years experience in design and construction and meets the other requirements set forth for such designations.

Structural Inspector II – A qualified volunteer who is a Non-Licensed Professional Architect or Engineer, or a person with carpenter or iron worker experience, or a Certified Building Inspector / Code Official, and meets the other requirements set forth for such designations.

Inspection Team Leader – A qualified volunteer who has Supervisor or Project Management experience and meets the other requirements set forth for such designations.

Volunteer Coordinators -

Statewide Contact Coordinator - A qualified volunteer who serves as the point of contact between SEMA and the Regional Contact Coordinators.

Regional Contact Coordinator - A qualified volunteer who serves as the point of contact between the Statewide Coordinator and other qualified volunteers in a designated geographical area regarding matters between SEMA and the qualified volunteers.

On-Site Team Coordinator - A qualified volunteer designated by the Regional Contact Coordinator to serve as the interface between the teams of volunteer inspectors and the Local Disaster Coordinator or other local government officials. The On-Site Team Coordinator is responsible for making inspection assignments within a designated local jurisdiction, assisting to ensure the smooth functioning of multiple Inspection Teams, appointing Inspection Team Leaders to improve operational efficiency when multiple inspection teams of 3-4 people, collecting and submitting the assessment forms and Summary of Inspections Logs to local government officials and SEMA and ensuring that the local jurisdiction provides for the welfare of all SAVE Inspectors working in their area.

APPENDIX B

RECOMMENDED INDIVIDUAL EQUIPMENT

Successful and efficient inspections require the availability of essential equipment for inspectors. While it is the responsibility of the local jurisdiction to furnish required equipment, it may be difficult to do so in times of emergency. Each SAVE volunteer is asked to bring with them as many of the below items as possible. Replacement of lost or damaged items will of course be the obligation of the local jurisdiction. Each person is urged to have these items in their vehicle, along with a full tank of gas so that in the case of an emergency we can "hit the ground running." Special circumstances and personal preferences may dictate other choices and additions to the following suggested items.

FIELD EQUIPMENT

SAVE I.D. Card and Drivers License
Hard Hat
Reflective Safety Vest
Flashlight & Extra Batteries
Binoculars
Clipboard
Assorted Tools
Hammer, Crescent Wrench, Pliers, Plumb Bob, Levels, Screwdrivers, Wire Cutters, Tape Measure, Knife, Etc.

ATC-20 Field Manual
Safety Glasses
Gloves
Dust Mask
Pen/Pencils
Camera/VCR

PERSONAL ITEMS

Canteen & Water (1/2 gal)
Non-perishable Food
Personal Hygiene Items
Money & Change
First Aid Kit

Rain Gear
Work Boots
Sun Screen
Credit Cards
Extra Clothing

Towel
Extra Eyeglasses (if needed)
Insect Repellant (if needed)
Medications (if needed)
Backpack (to carry items)

REMEMBER SAFETY FIRST & FOREMOST